

Clean Air Act

Advisory Group

Meeting

March 29, 2005

Emissions Inventory Overview

Data Acquired from the 2002 National
Emissions Inventory

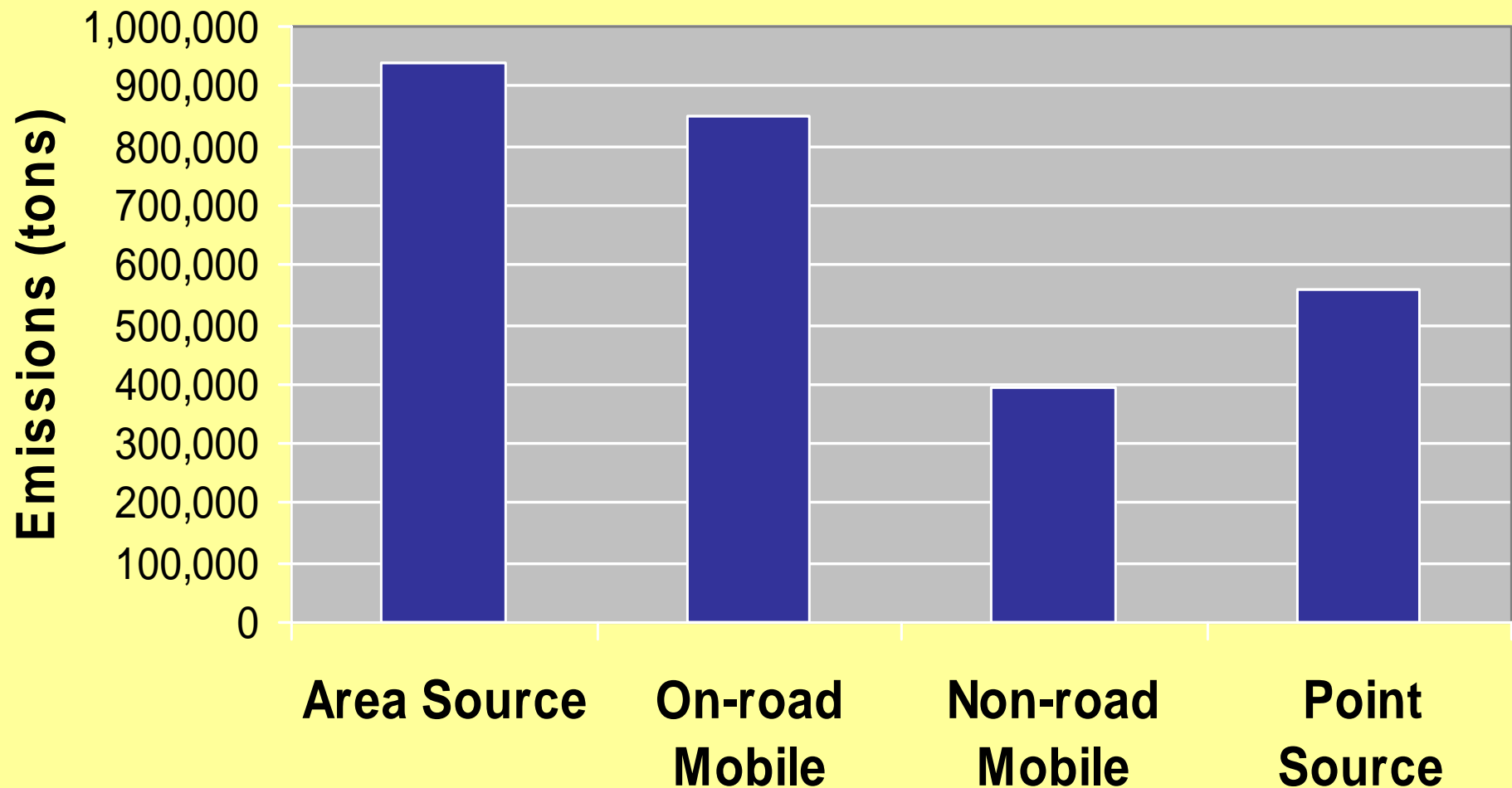
Clean Air Advisory Group

March 29, 2005

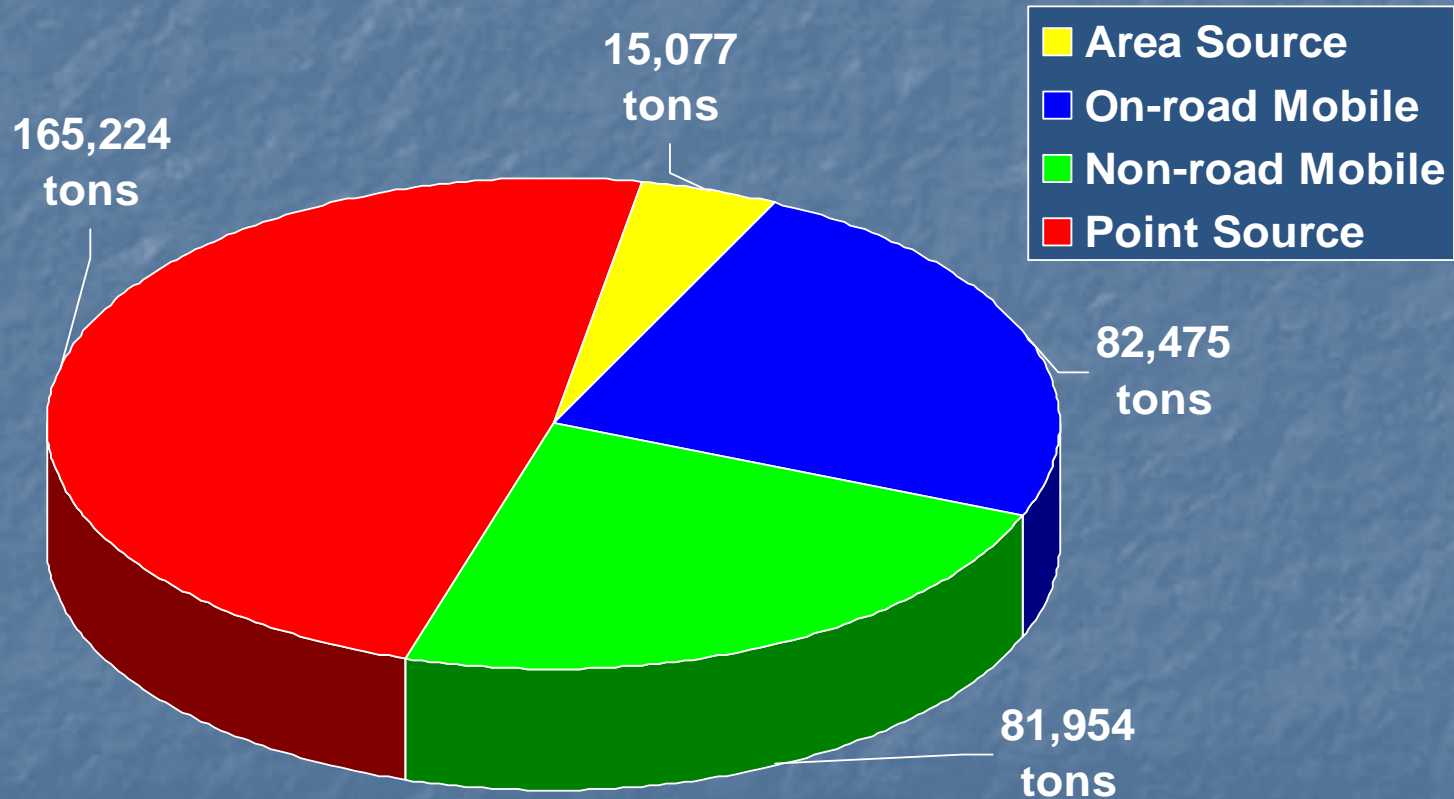
Emissions Source Categories

- **Point** Large, stationary, identifiable emissions sources
- **Mobile** Automobiles, trucks, aircraft, trains, construction and farm equipment, (on-road and off-road)
- **Area** Smaller sources that do not qualify as point sources. Examples include dry cleaners, residential wood heating, auto body painting, and consumer solvent use.

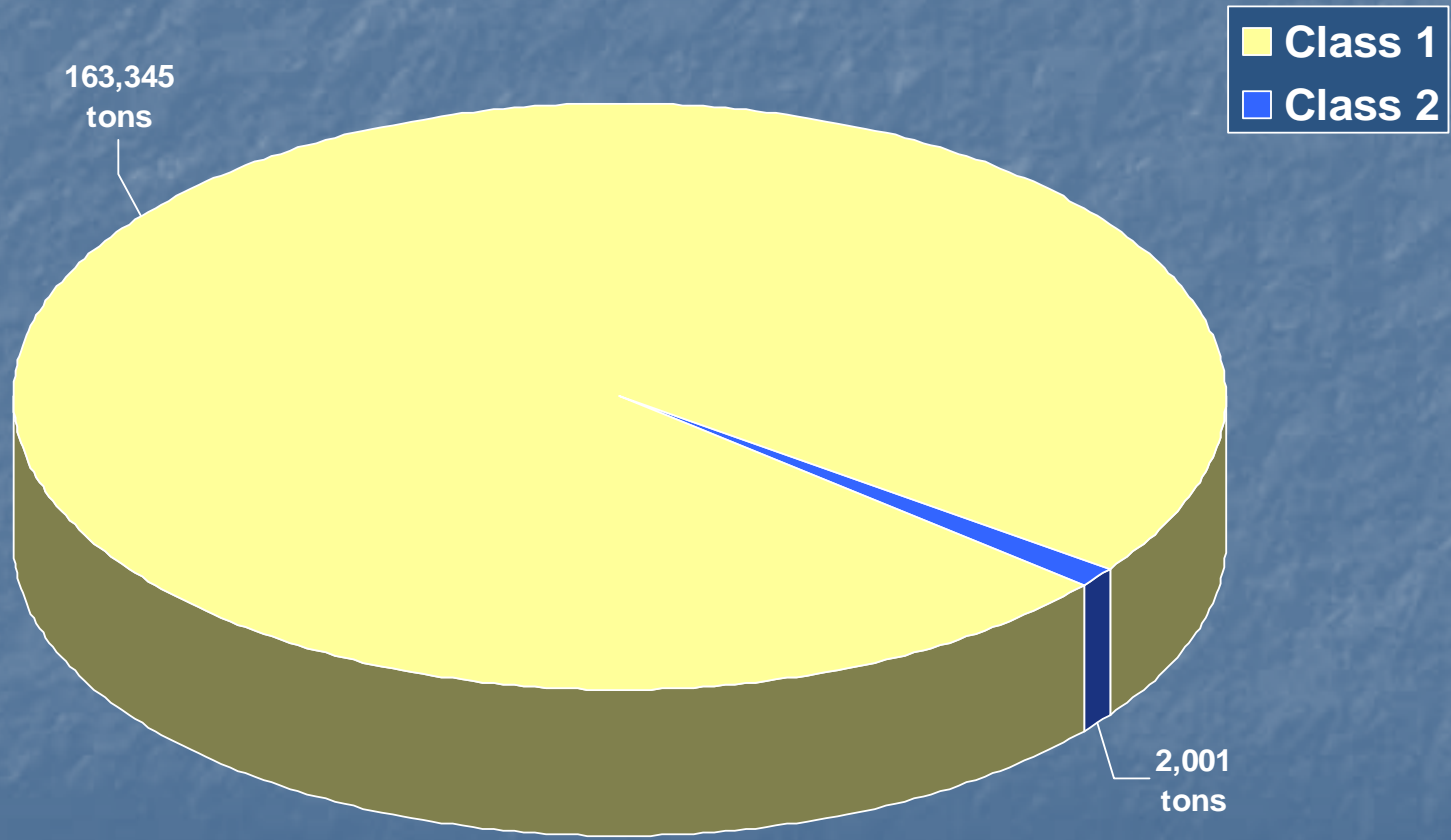
2002 Kansas Emissions Source Totals for All Pollutants



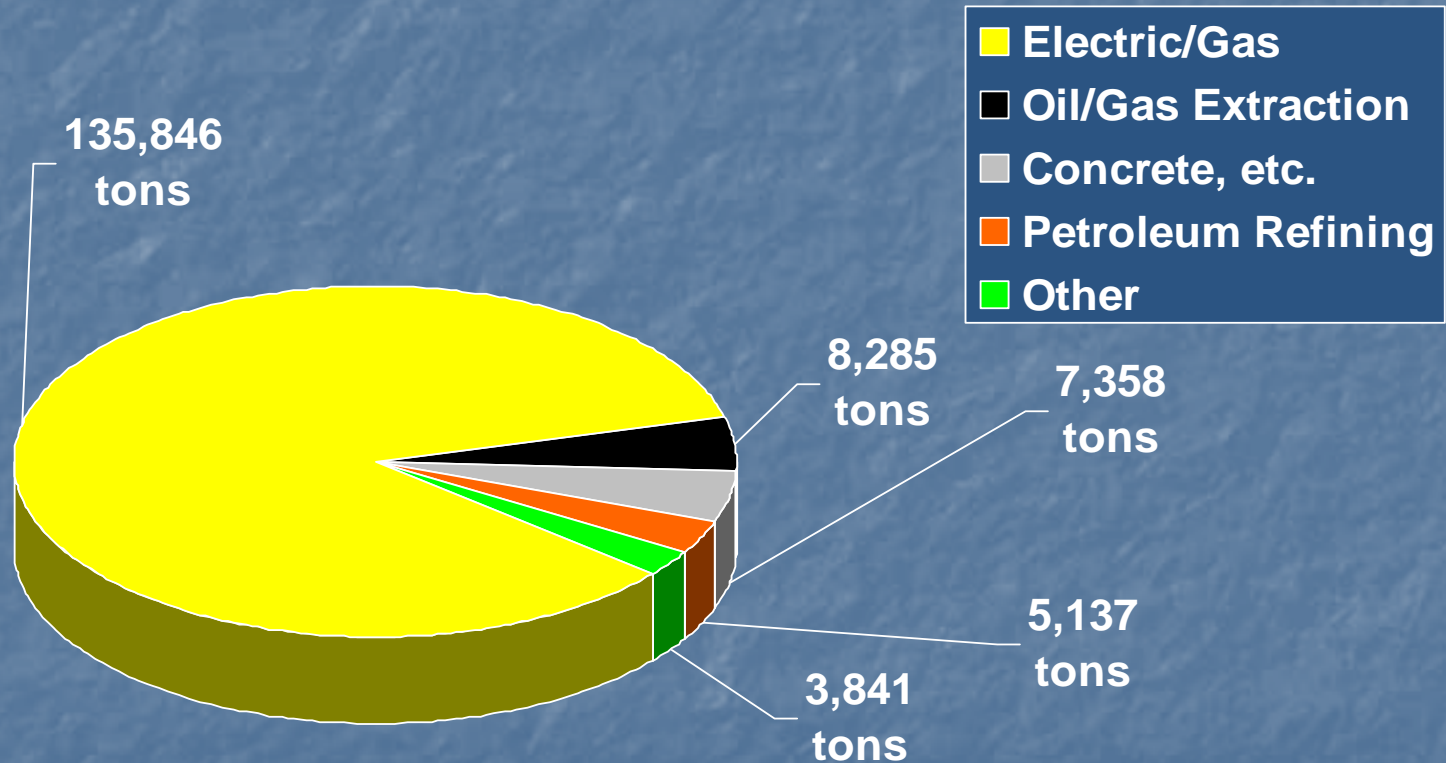
NOx Emissions by Source Category



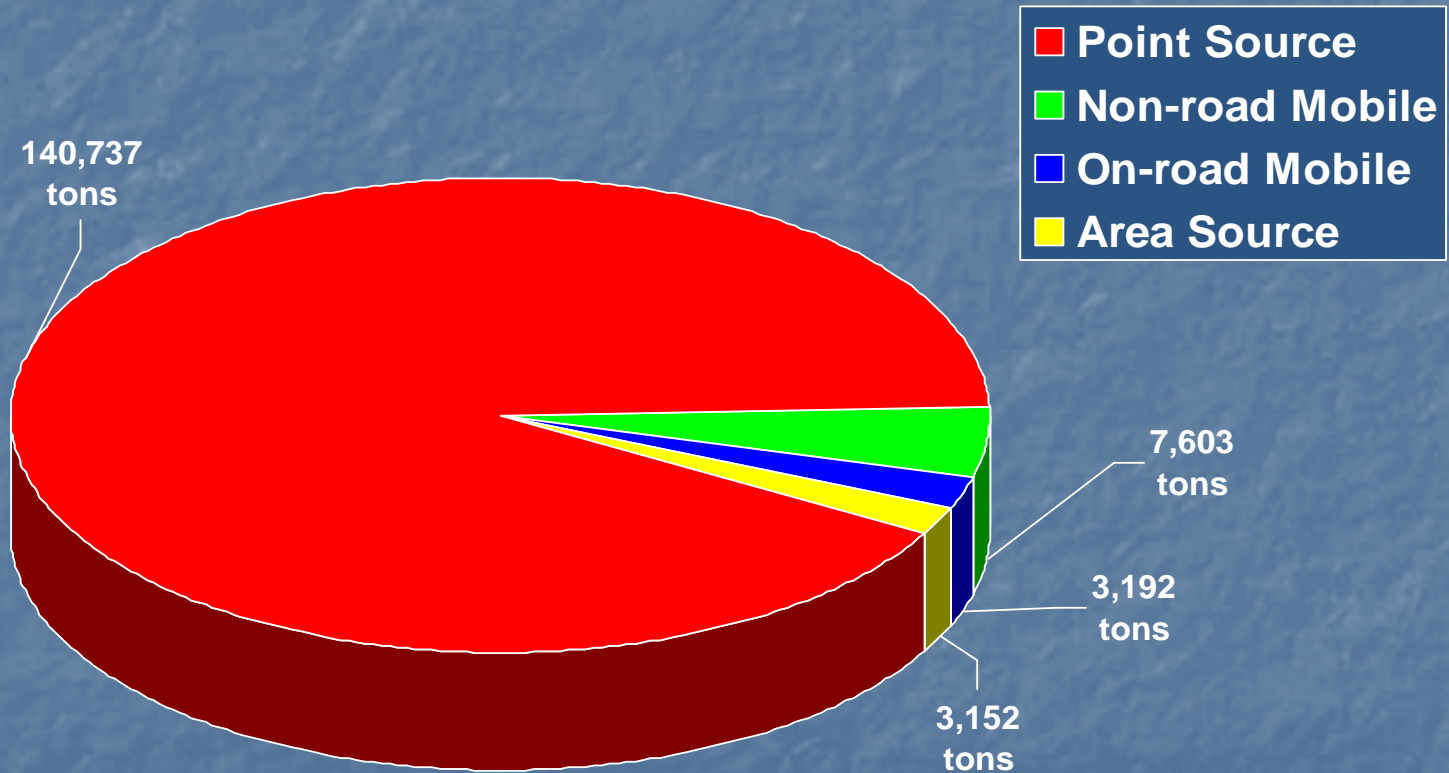
Point Source NO_x Comparison



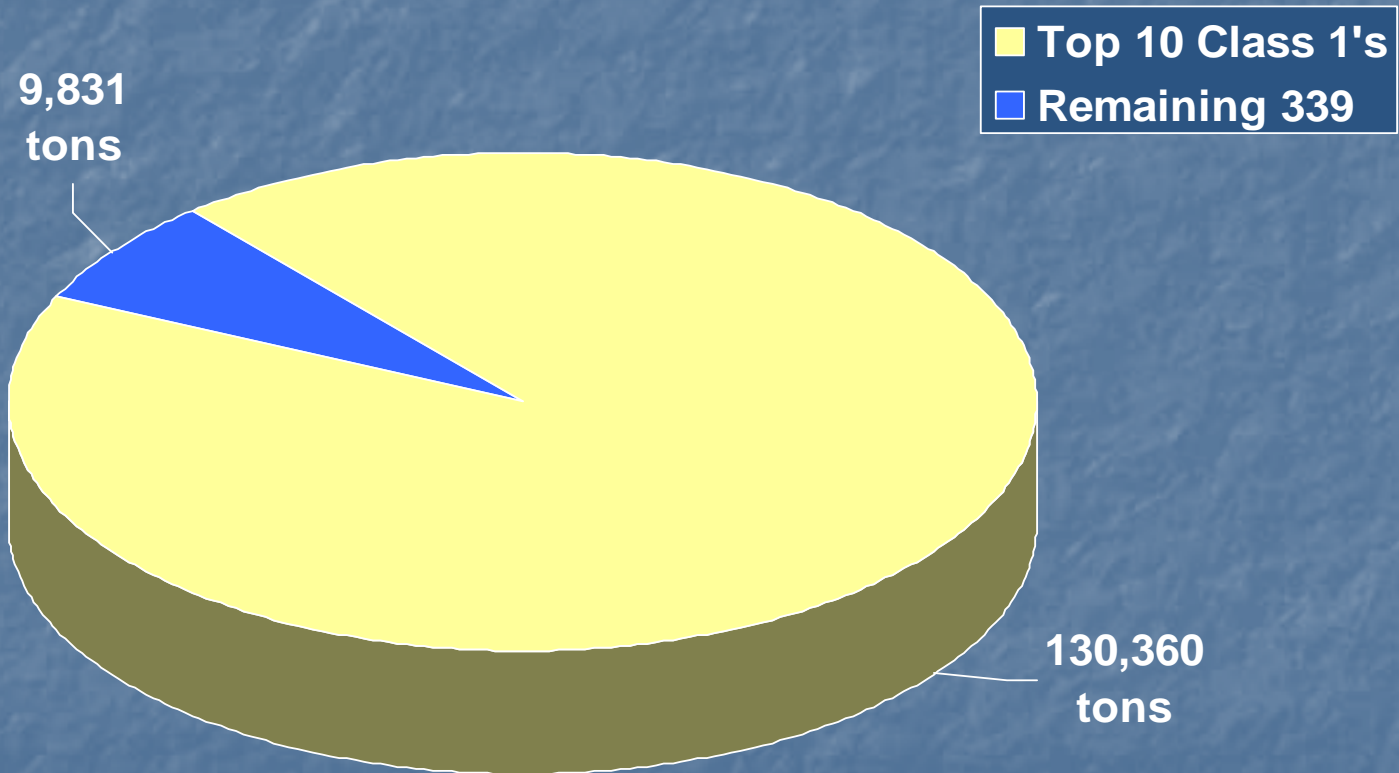
Point Source NOx by Category



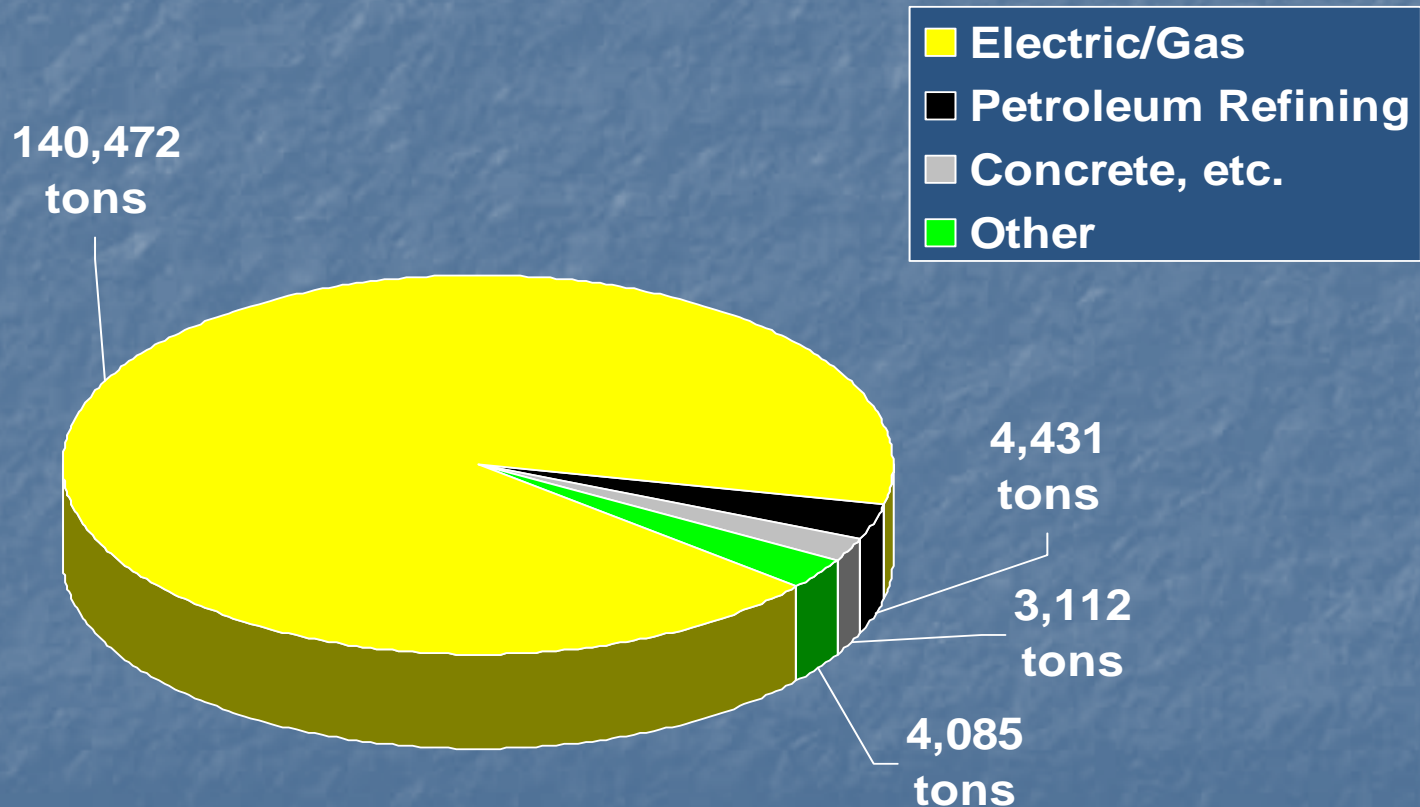
SO₂ Emissions by Source Category



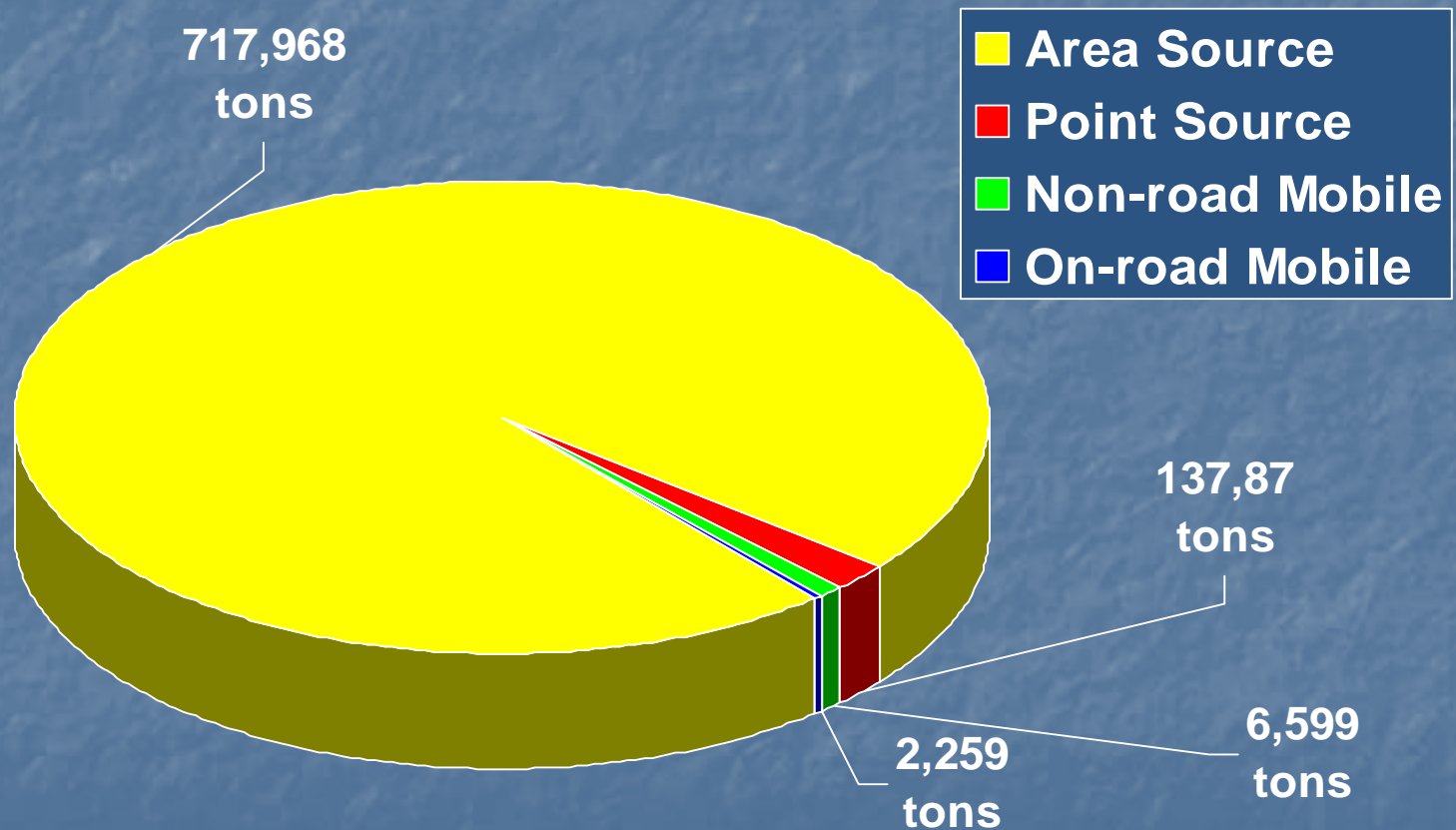
Class I SO₂ Comparison



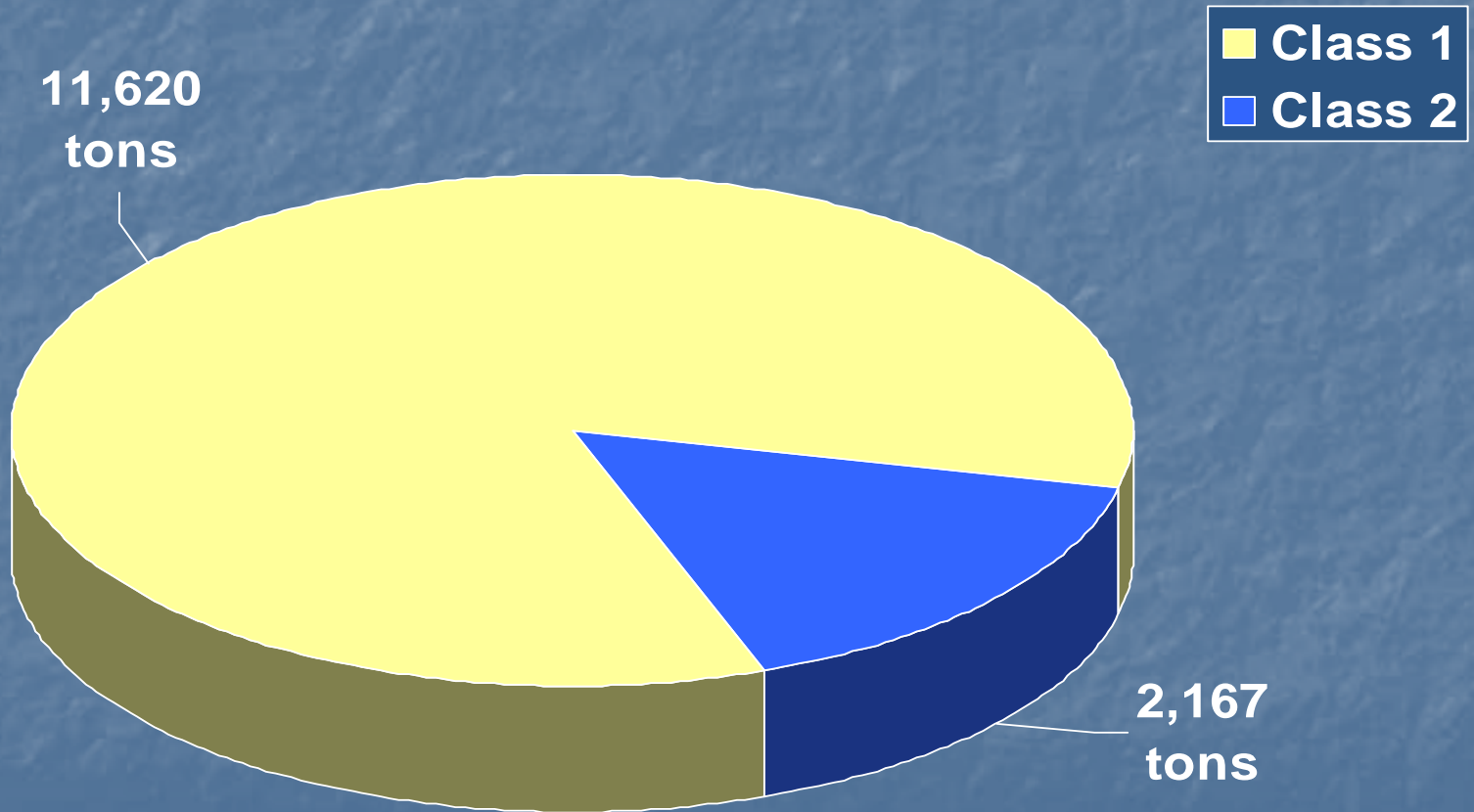
Point Source SO₂ by Category



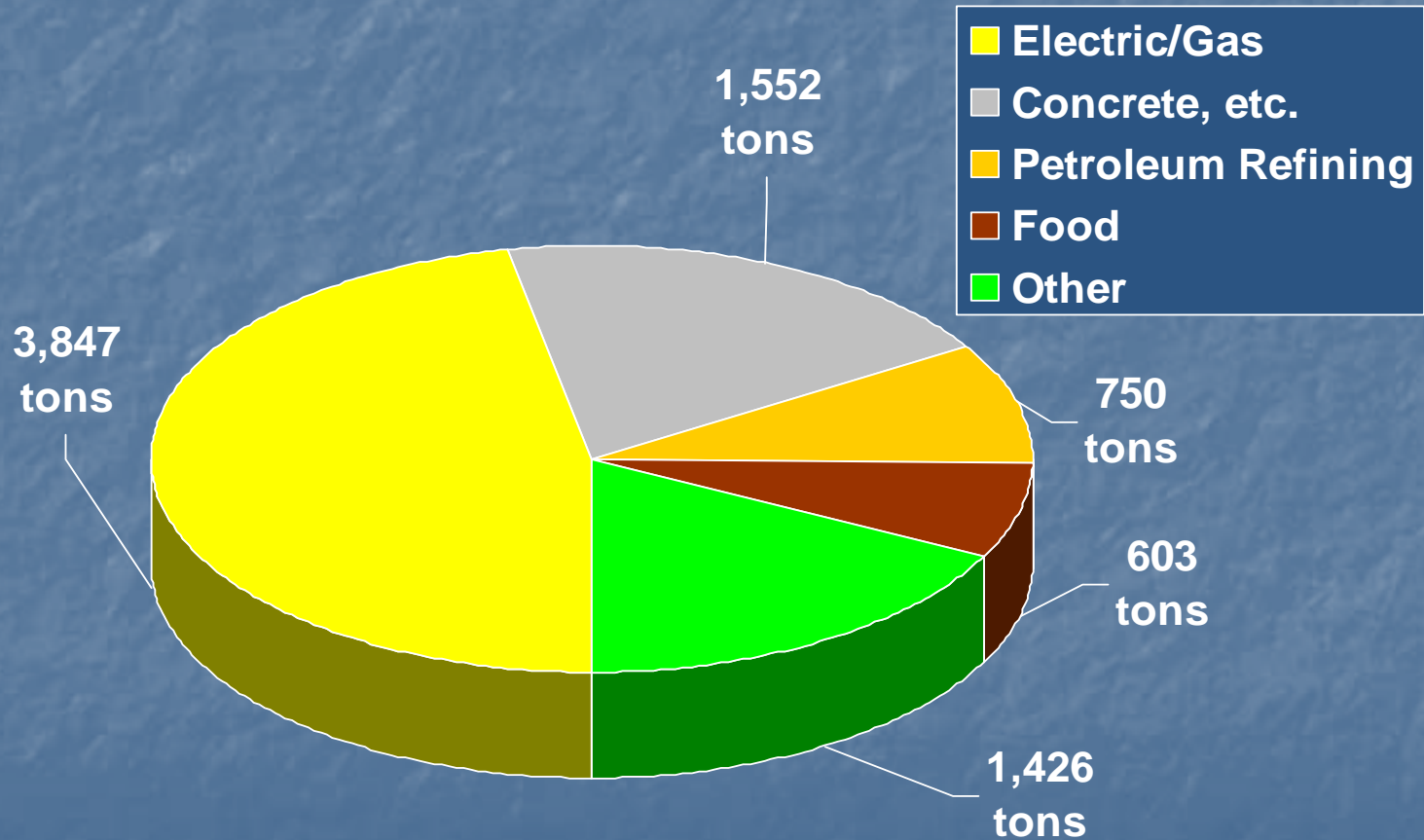
PM-10 Emissions by Source Category



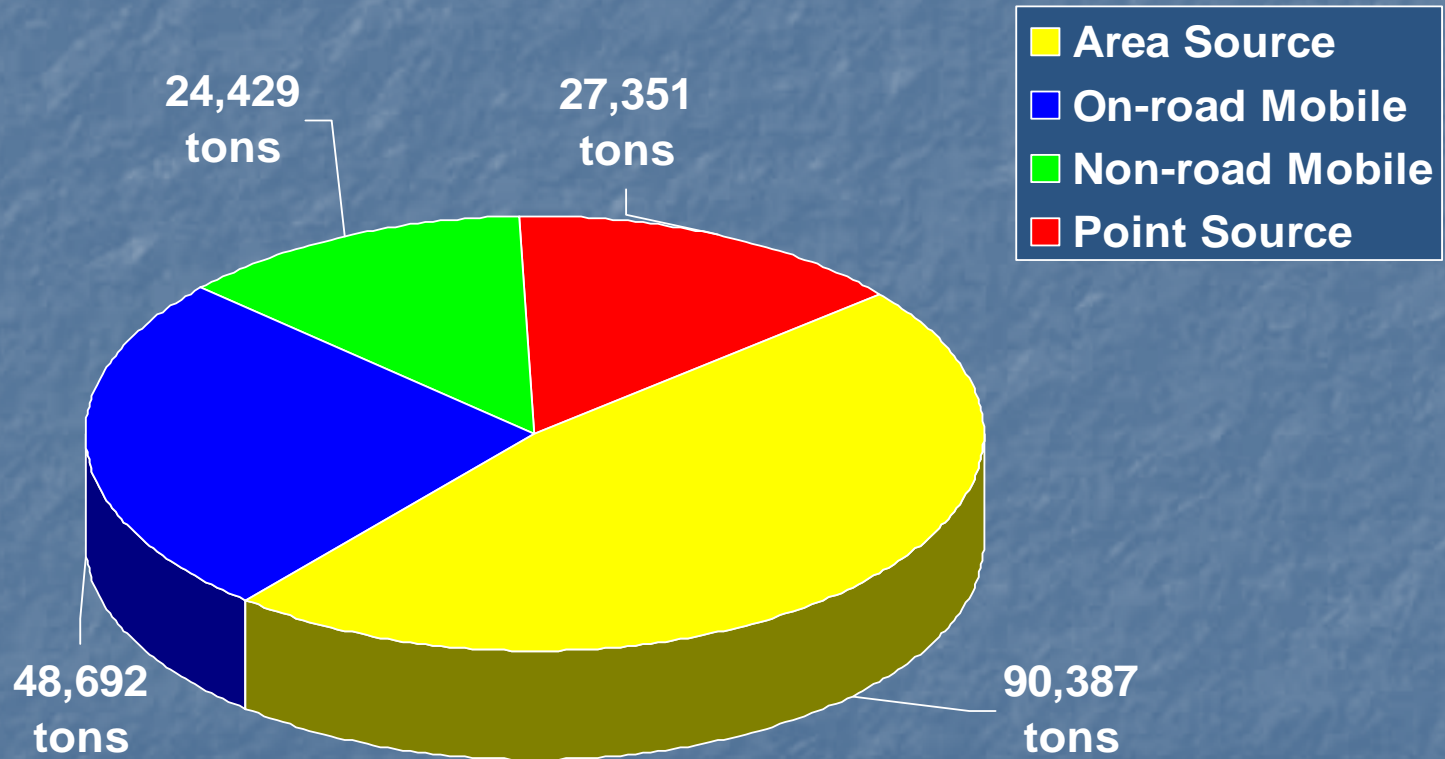
Point Source PM-10 Comparison



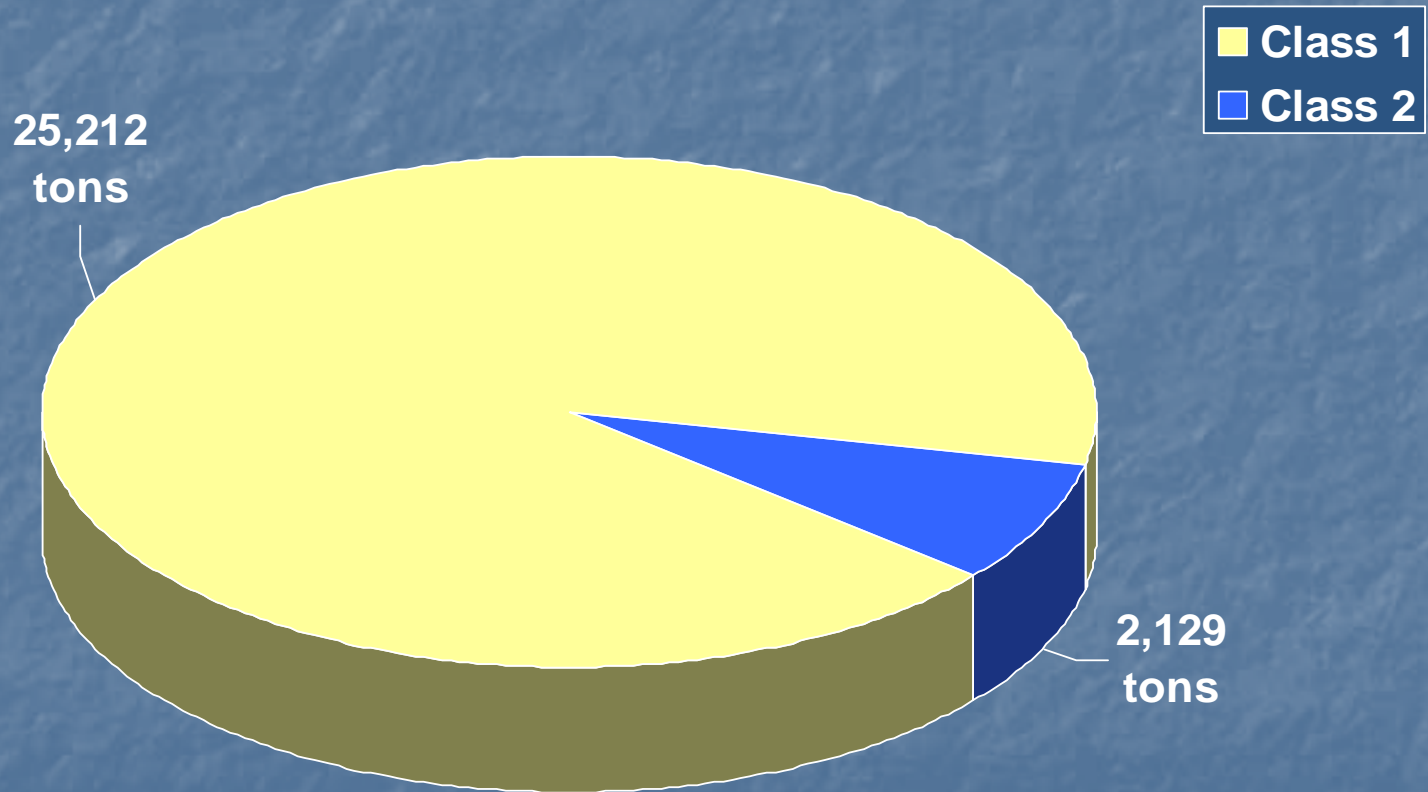
Point Source PM-10 by Category



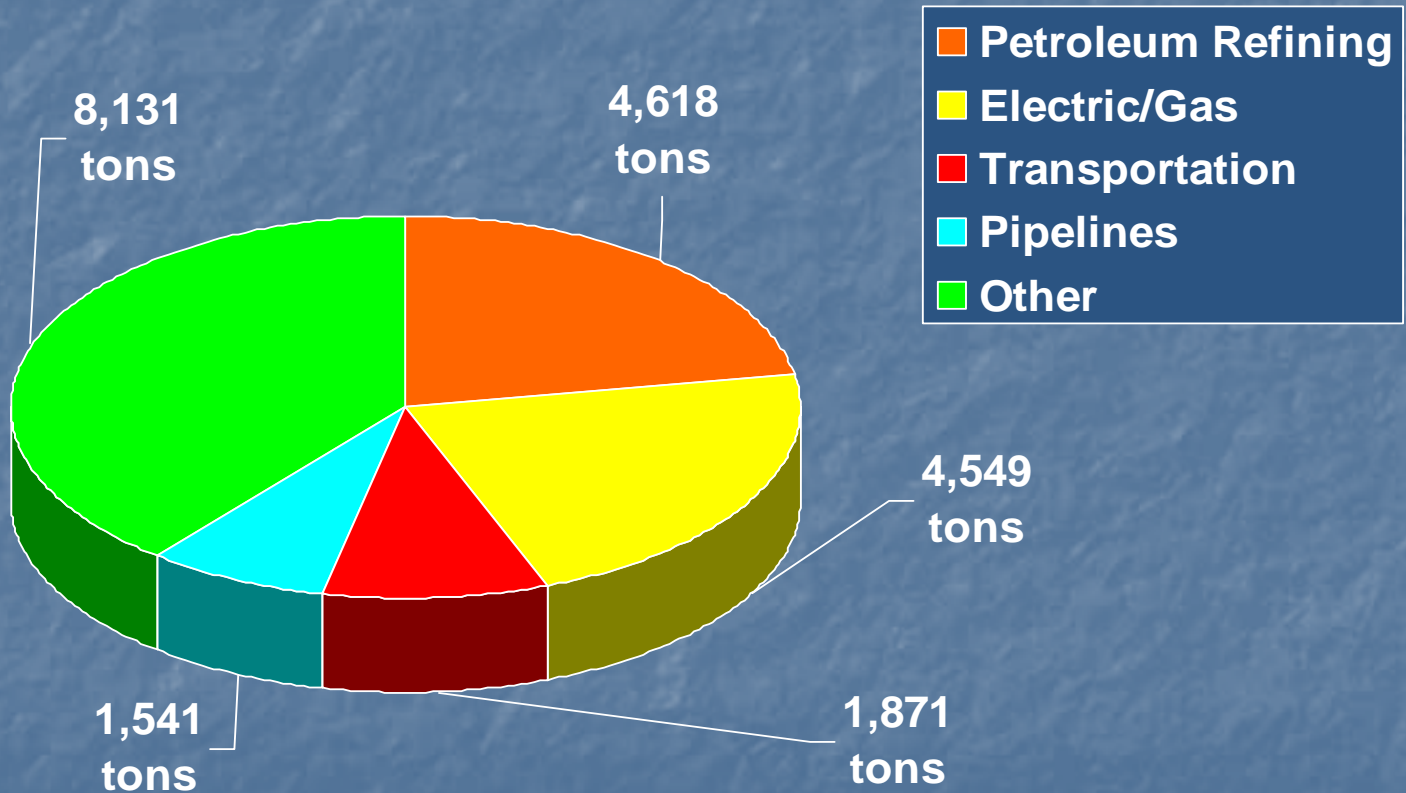
VOC Emissions by Source Category



Point Source VOC Comparison

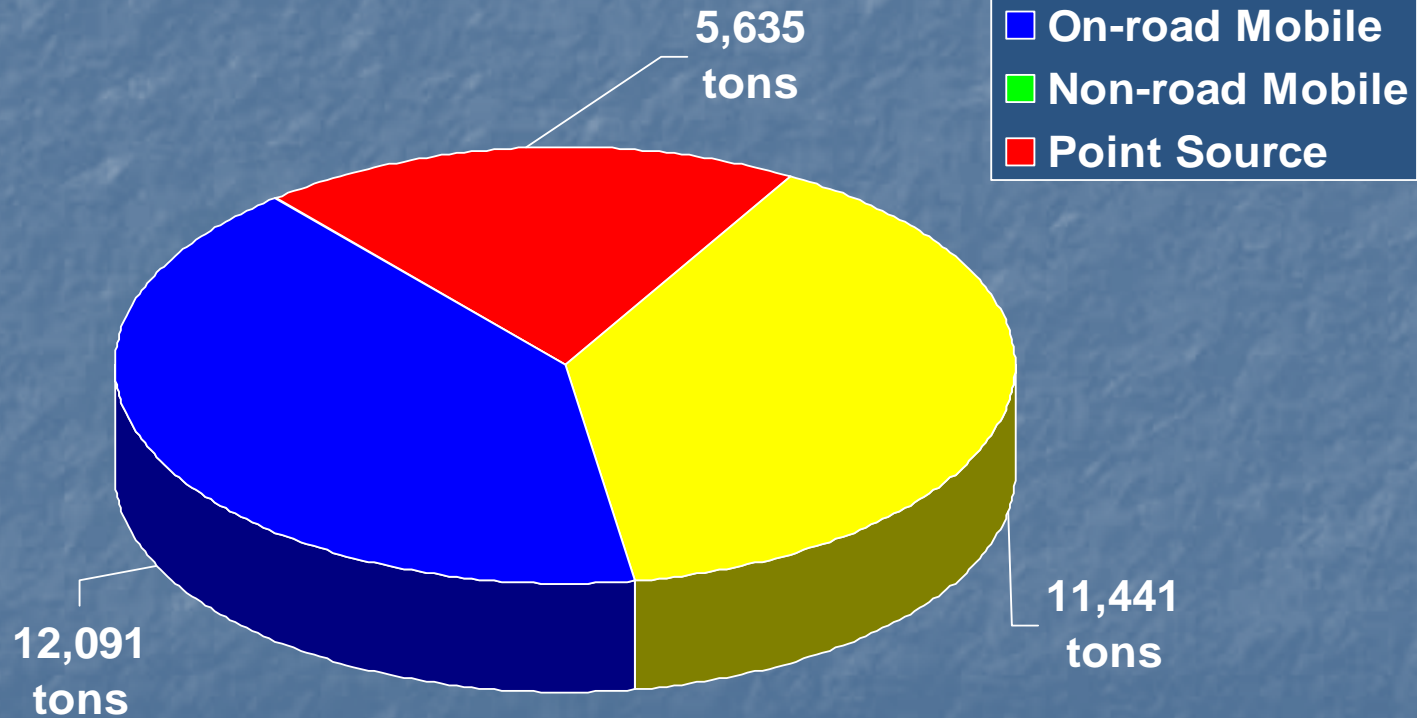


Point Source VOC by Category

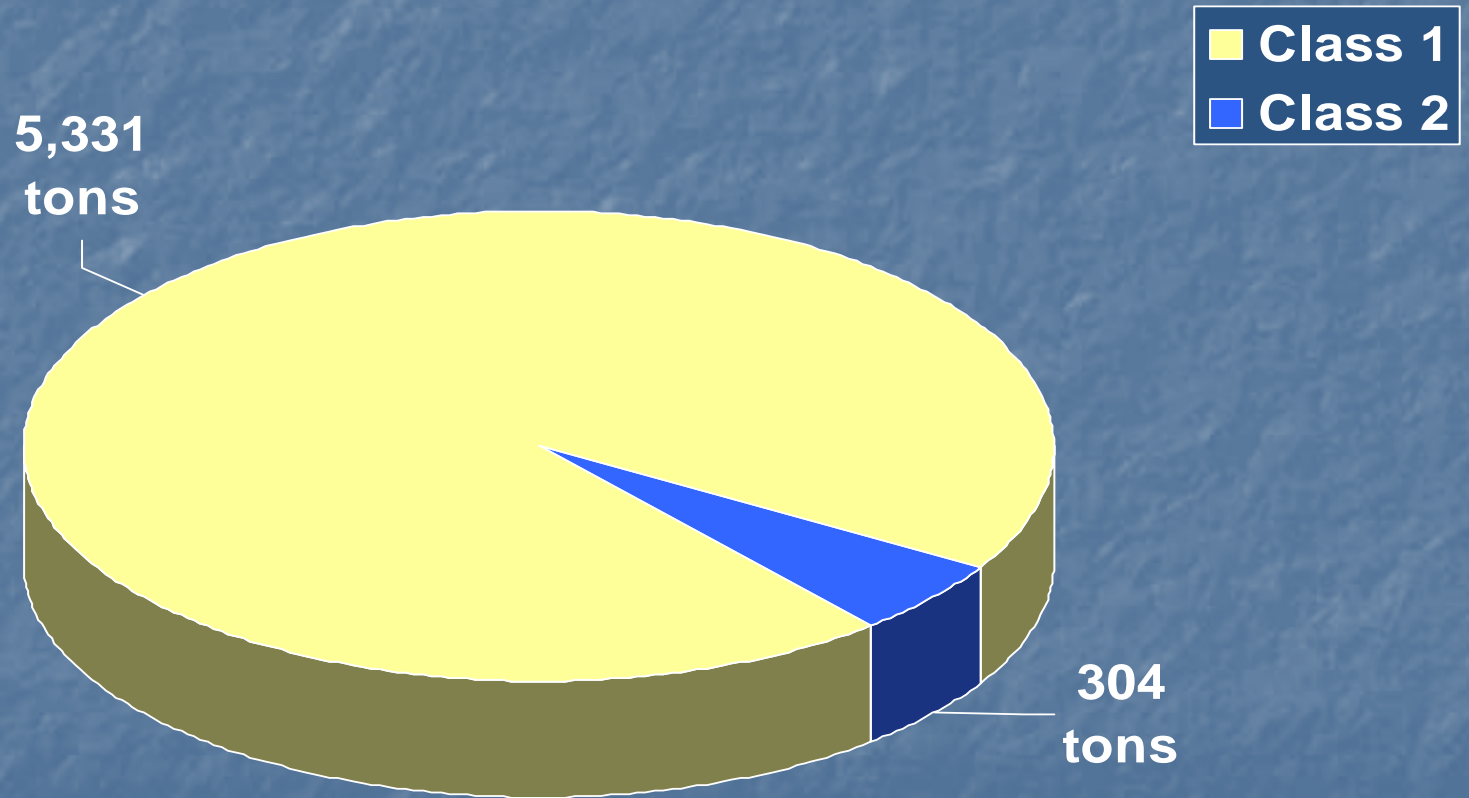


HAP Emissions by Source Category

*Non-Road Mobile HAPS data was not available



Point Source HAP Comparison



Dealing with the Rest of the Pie

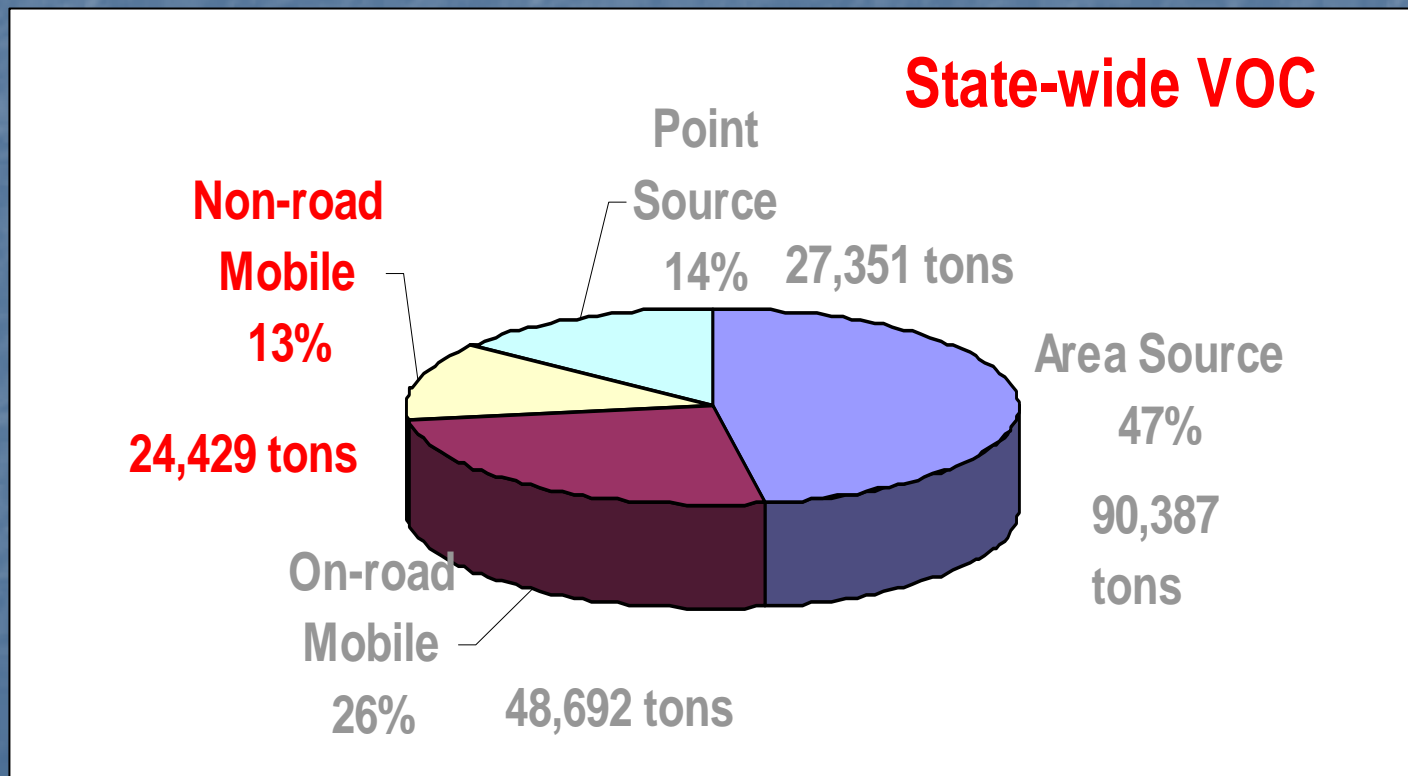
Clean Air Advisory Group

March 29, 2005

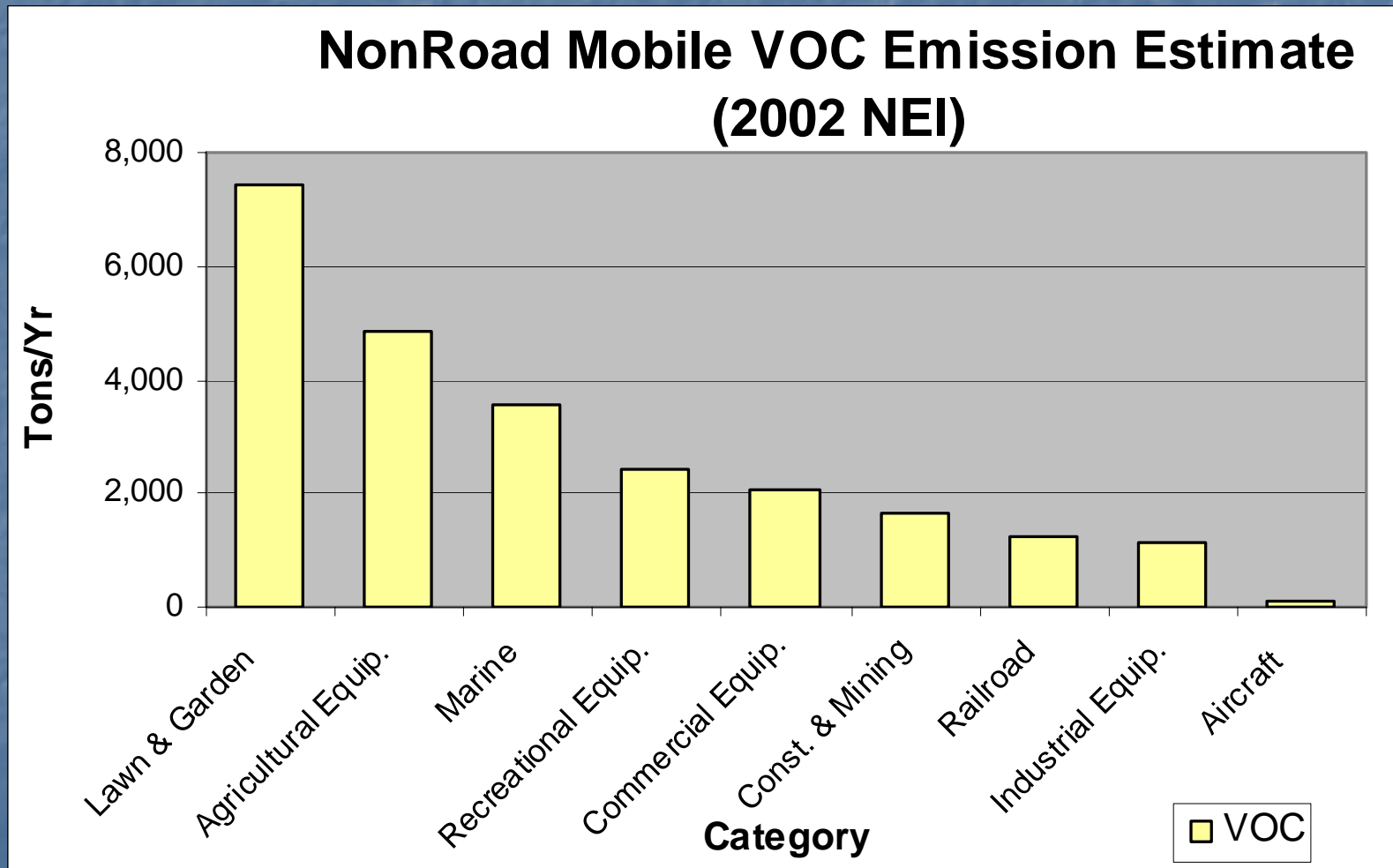
Why Lawn & Garden?



- Over 24,000 tons of VOC's are emitted annually by Nonroad Mobile sources



- Lawn & Garden is the largest Nonroad Mobile category contributing VOC's



Lawn & Garden Outreach Strategy Goal:

- *To build awareness and interest*
- *Motivate behavior change*
- *Action*

Target Audiences:

- General Public
- Retail and/or Manufacturers
- Industry and/or Small Business
- Government Facilities/Private Entities



Lawn & Garden Outreach Strategy Highlights

General Public

- Lawn Mower Exchange Program
- Gas Can Replacement Program
- Posters / Promotional Items
- Master Gardners
- Citizen Award
- Advertising



Lawn & Garden Outreach Strategy Highlights

Retail/Manufacturers

- Air friendly product research and product guide
- Air friendly product shelving
- Display tags
- Retail recognition program



Lawn & Garden Outreach Strategy Highlights

Industry

- Workshops
- Information Packets
- Research Landscape planners and installers

Government Facilities / Private Entities

- Workshops



Your help is needed.

Contact KDHE to partner
Ideas / Comments

Air Permit Update Initiative

Kansas Department of Health and
Environment

Bureau of Air and Radiation NSR Task Force
March 2005

Activated in October 2004 to:

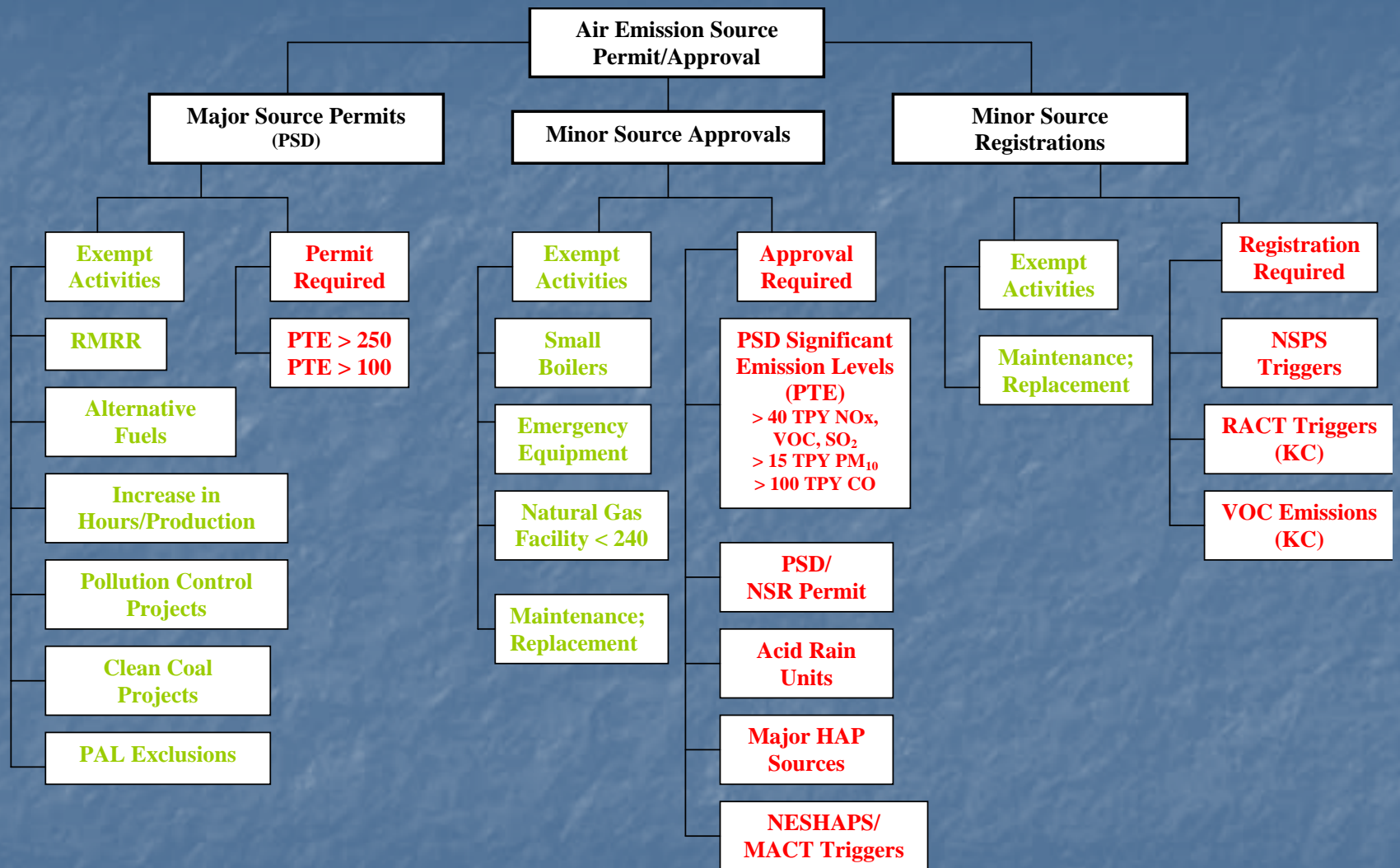
- Update Kansas PSD Program
- Alleviate Permit Backlog and Construction Delays
- Re-focus Permit Program on Permit Quality and Environmental Benefits
- Build More Efficient Permit System

Major Problems Identified:

- Too much time and resources spent on insignificant sources as a result of the 300(b) program.
- Questions related to maintenance/replacement projects.
- Crisis-oriented “construction delay” projects at small sources.
- Permit/approval programs appear duplicative and confusing (air impact vs. source tracking).

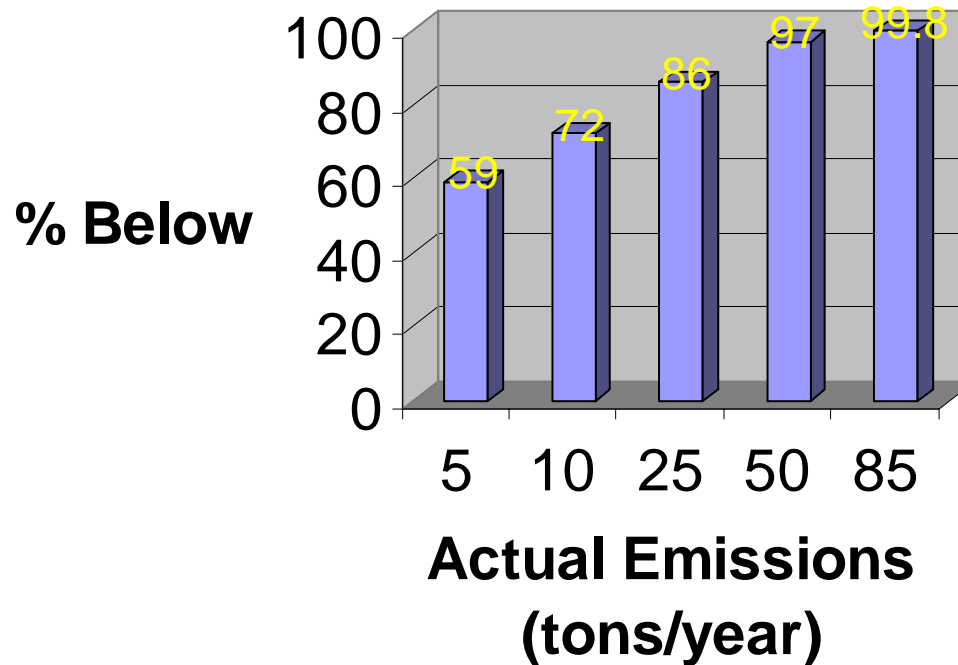
Construction Permit Allocations - 2003

KAR 28-19-300		Major	Minor	Approvals
# of Work Products	Current	5	69	301
	New (est)	10+	106	105
% of Work Hours	Current	<i>15</i>	<i>10</i>	<i>75</i>
	New (est)	<i>35</i>	<i>35</i>	<i>30</i>
% Point Source Emissions	Current	98.2	1.8	0
	New (est)	-	-	-
% Total Ks Emissions	Current	16	0.3	0
	New (est)	-	-	-



Class II Actual Emissions: PTE > 100

Class II Actual Emissions (673 Sources)



Task Force Activities:

- Update PSD Program

- Adopt new 40 CFR 52.21 (PSD) regulation.
- Revise KAR 28-18-300 to accommodate PSD changes.
- Prepare new outreach initiative, program forms, and guidance materials for the new activities.

Task Force Activities:

- Alleviate Backlog and Delays
 - Eliminate construction barriers and delays associated with small source approvals.
 - Reduce # of small/repetitive emission source approvals.
 - Standardize permitting process. (Utilize more generalized permit processes)
 - Improve outreach programs for the regulated community.

Task Force Activities:

- Re-focus on Environmental Protection
 - Spend more permit-related time and resources on the more complex major source permits.
 - Reduce reporting and paperwork for lower emitting sources.
 - Prioritize permit program expenditures to improve timeliness of responses and air quality protection.

Task Force Activities:

- Build More Efficient System
 - Utilize combined construction/operating tools to reduce duplication.
 - Organize permit resources and expertise by industry/emission source categories.
 - Establish emission thresholds for use in inventory, compliance, and permit decisions.
 - Prevent duplication in compliance activities and reporting requirements.

Revisions to KAR 28-19-350; Prevention of Significant Deterioration

- Adopts 40 CFR 52.21 by Reference
- Excludes Stayed Provisions (because they are not in effect)

Revisions to KAR 28-19-200

Definitions;

- Updates existing definitions for “potential-to-emit” and “federally enforceable”
- Adds definitions for the terms “permit”, “approval”, and “country grain elevator”

Revisions to KAR 28-19-300/300a; Construction Approvals

- Establishes small source “registration” program.
- Provides several small source exemptions in KAR 28-19-300a.
- Clarifies the term “modification” as it applies to maintenance-type activities for KAR 28-19-300.
- Still has PSD disclaimer.

Revisions to KAR 28-19-302; Construction Approvals

- Clarifies use of approvals for issuance of PALs, Clean Units, PCPs, and combined approvals.
- Includes procedures for minor source combined construction/operating approvals.
- Sets fees for combined approvals.

Revisions to KAR 28-19-204; Public Participation

- Clarifies differences in public notice procedures for permits and approvals.
- Describes factors to be considered in public notice decisions for approvals.
- Assures compliance with 40 CFR Part 51. (NAAQS/SIP)

Revisions to KAR 28-19-301; Application and Issuance

- Expands upon the approval application procedures.
- Clarifies procedures for submitting applications for combined approvals.
- Focuses applications and issuance procedures on approvals.

Revisions to KAR 28-19-303; Additional Provisions

- Revoked in response to the replacement of the “approval” program with the “registration” program.

Revisions to KAR 28-19-304; Fees

- Clarifies the terms “permit” and “approval” as they relate to fees.

NSR Review Process at KDHE

- Receive Input from External BAR Partners
 - EPA
 - KDHE Division/Agency
 - Clean Air Act Advisory Group
 - Department of Administration
 - Attorney General
 - Legislature
 - Public

KDHE Air Permits and Compliance Web Site

- Bureau of Air and Radiation

<http://www.kdhe.state.ks.us/bar/index.html>

- Air Permits and Compliance

<http://www.kdhe.state.ks.us/air-permit/index.html>

Web Site Updates

- Permit Contact for Each Facility
- Where to Send Reports and Notifications
- Updated Application Forms and Added Word Format
 - Class I
 - Example Class I Application
 - Class II
 - Permits by Rule
 - General Permits

Suggestions?

- How can we improve the Class I renewal process?
- How can we improve permit applications?
- Will simplifying forms make more work for facilities because processes are already in place?

Questions???

Compliance and Enforcement for Environmental Results

Russ Brichacek
Mindy Bowman

New Directions

- Streamlining Compliance and Enforcement Process
- Targeting Emission Sources for Inspections
- Compliance Initiatives
- New MACT Outreach
- Assist Inspectors
- Customer Service
- Workshops

Targeting Inspections

- Revised inspection schedule
- Set priorities based on actual impact on air quality
 - Major emission sources of air pollutants
 - Compliance history
 - Emission inventory information: HAPs and VOCs
 - KDHE and EPA compliance initiatives
 - Impact on community air quality

Compliance Initiatives

Based on various factors, including

- New regulations affecting industries
- Participation from trade or industry organizations, if they exist
- Feedback from industry segment
- High level of noncompliance noted by field inspections or regulatory report review

New MACT Outreach

- Letters to potential affected facilities
- Assistance on initial notifications
- Inspection forms
 - For our field staff
 - For regulated community
- Assist inspectors on initial inspections

Assist Inspectors

- New MACT rules
- New NSPS (e.g. new incinerator rule)
- Class I facilities
- Inspections due to no response on paperwork violations
- Training

Customer Service

- Assist all customers on compliance issues
- Technical guidance documents
- Compliance assistance meetings
- Regulatory compliance information
- Resource information
- Fast and professional responses

Workshops

- Participate in BAR Workshops
- Participate in Industry Segment Workshops
- Develop and present compliance-related presentations
- Availability of compliance staff for industry specific workshops

Web Site Improvements

- Compliance Guidance Documents
- Compliance Frequently Asked Questions
- Performance Test Guidelines
- Performance Test Companies
- Permit Writer Assigned to Each Facility

KDHE Air Permits and Compliance Web Site

- Bureau of Air and Radiation

<http://www.kdhe.state.ks.us/bar/index.html>

- Air Permits and Compliance

<http://www.kdhe.state.ks.us/air-permit/index.html>

Compliance Guidance Documents

- Method 9 Compliance Testing
- Open Burning of Waste Wood
- Open Burning for Fire Training
- Portable Combustion Gas Analyzer
- Example RATA Report
- Example Semi-annual Report

Coming Soon

- SEP Policy
 - Environmental Management Systems
- Compliance Policy
- Regulatory Enforcement Policy
(aka Penalty Policy)

Summary

- Focus on major emission sources of air pollution emissions
- Decrease emphasis on non-emission related violations
- Use resources for greatest impact on air quality

Suggestions?

- How can we improve outreach?
- What will help facilities comply with air quality regulations and permits?
- What guidance do you need?

Questions???

Kansas Department of Health and Environment

Bureau of Air and Radiation Regulatory Agenda

Regulations Ready for Public Hearing

June 2005

- K.A.R. 28-19-22
Sulfur Rule – Revocation
- K.A.R. 28-19-575 through 28-19-578
Class III permit rules - Revocation
- K.A.R. 28-19-517, 542, 546, 561 –
563
Class II inventory rules – Amended to
change inventory submission date

NSR Reform Package

- K.A.R. 28-19-200 – Definitions
- K.A.R. 28-19-204 – Public Participation
- K.A.R. 28-19-300 – Construction Approvals
- K.A.R. 28-19-301 – Approval Application
- K.A.R. 28-19-302 – Additional Provisions
- K.A.R. 28-19-303 – Revocation
- K.A.R. 28-19-304 – Approval Fees
- K.A.R. 28-19-350 – PSD Adoption by Reference

Federal Regulation Updates

- K.A.R. 28-19-201 – Regulated compounds list
- K.A.R. 28-19-275, 276 – Acid Rain
- K.A.R. 28-19-801 – Transportation Conformity

Class I Permit Updates

- As BAR completes the NSR Reform package, we will begin to look at K.A.R. 28-19-500 series of regulations.
- To evaluate consistency with 300 series regulations
- To evaluate consistency with public participation requirements
- To implement streamlining procedures for permitting

Technical Guidance Documents and Informational Sheets

Vick Cooper

Technical Guidance ^(1/3)

- Emergency Equipment & Country Grain Elevator BAR 2004-05
- Routine Maintenance, Repair, Replacement BAR 2004-06
- Class I Re-classification Guidance BAR 2004-11

Technical Guidance ^(2/3)

- Handling of Asbestos-Containing Debris Following Catastrophic Emergency Situations BAR 2002-01
- Method 9 Compliance Testing Requirements BAR 2001-02
- Open Burning of Waste Wood BAR 2000-01

Technical Guidance (3/3)

- Intentional Burning of Houses & Other Buildings for the Purpose of Fire Training
BAR 2000-02
- Portable Combustion Gas Analyzer BAR
1998-01
- Open Burning at KDHE Approved Tree and Brush Sites
- Performance Test Guidelines

Informational Sheets (1/2)

- Overview of Kansas Air Quality Program
- Construction Permits and Approvals
- Commencing Construction K.A.R. 28-19-300 State Construction Permits and Approvals
- Example Relative Accuracy Test Audit (RATA) Protocol

Informational Sheets (2/2)

- Example Class I Permit Semi-Annual Report
- Confidential Information
- Performance Testing Companies

In Progress

- Deviations and Reporting
- K.A.R. 28-19-11
- K.A.R. 28-19-31

Suggestions?

- What guidance would be helpful to you?
- What information should be on the web site?
- Other ways to make the permits and compliance process easier?

Clean Air Interstate Rule (CAIR)

Tom Gross

Clean Air Act Advisory Group Meeting

March 29, 2005

Initial CAIR Results - 2003

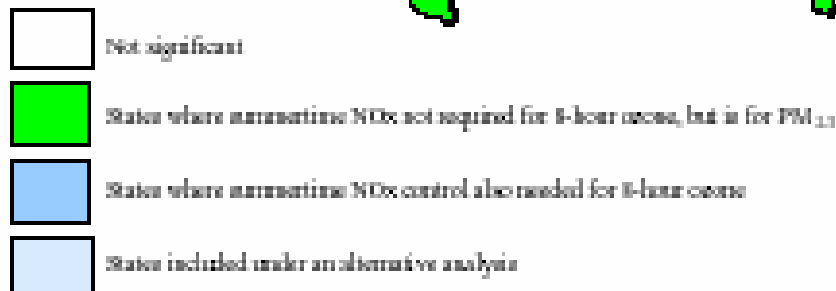
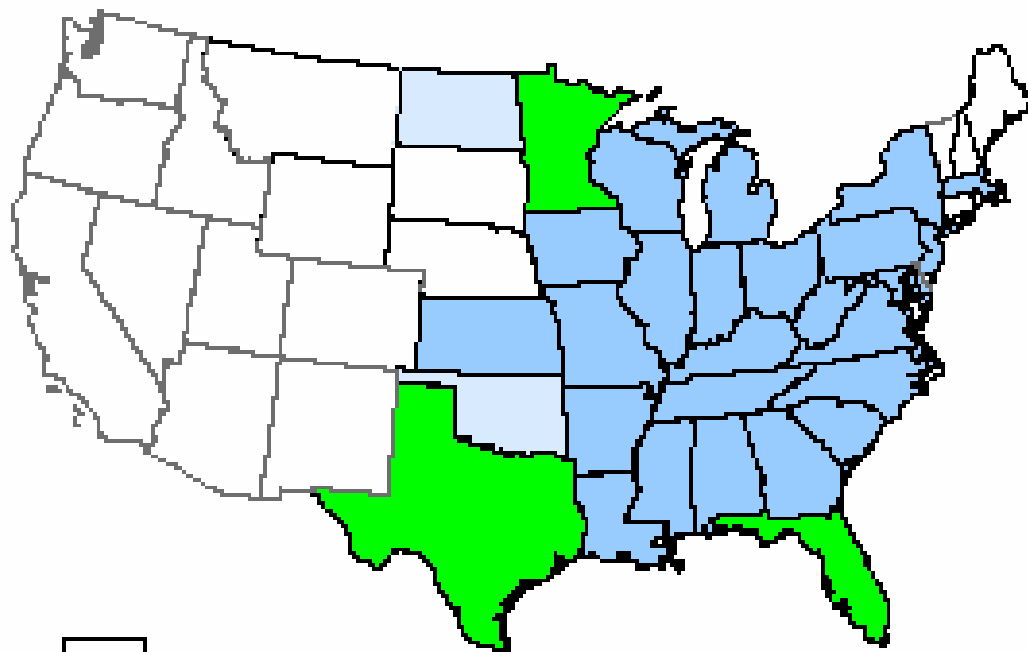
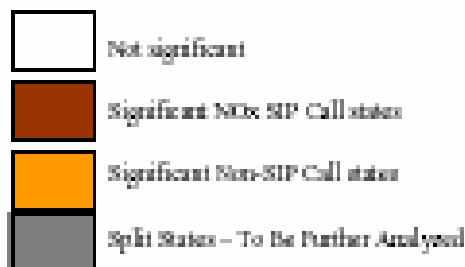
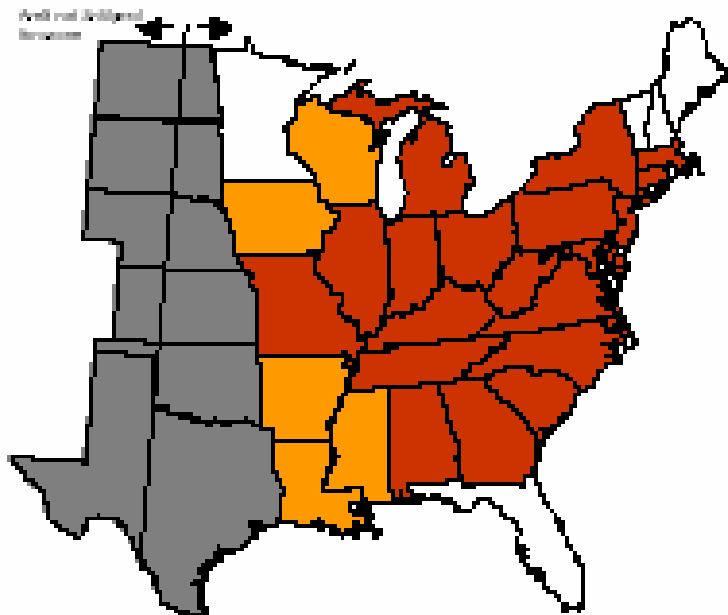
- Modeling used - REMSAD for PM and CAMx for Ozone
- 2001 proxy inventory used for modeling was grown from 1996 National Emissions Inventory (NEI)
- “Significant contribution” initially set at 0.15 ug/m^3
- Kansas included in first round of rule with a $\text{PM}_{2.5}$ “significant contribution” of 0.15 ug/m^3

States Identified as Having Significant Contributions to 8-hour Ozone and PM_{2.5}

8-Hour Ozone: Summertime NO_x reduction requirements for 25 states

PM_{2.5}: Annual SO₂ and NO_x reduction requirements for 28 states

Arctic and Subarctic
Sovereignty



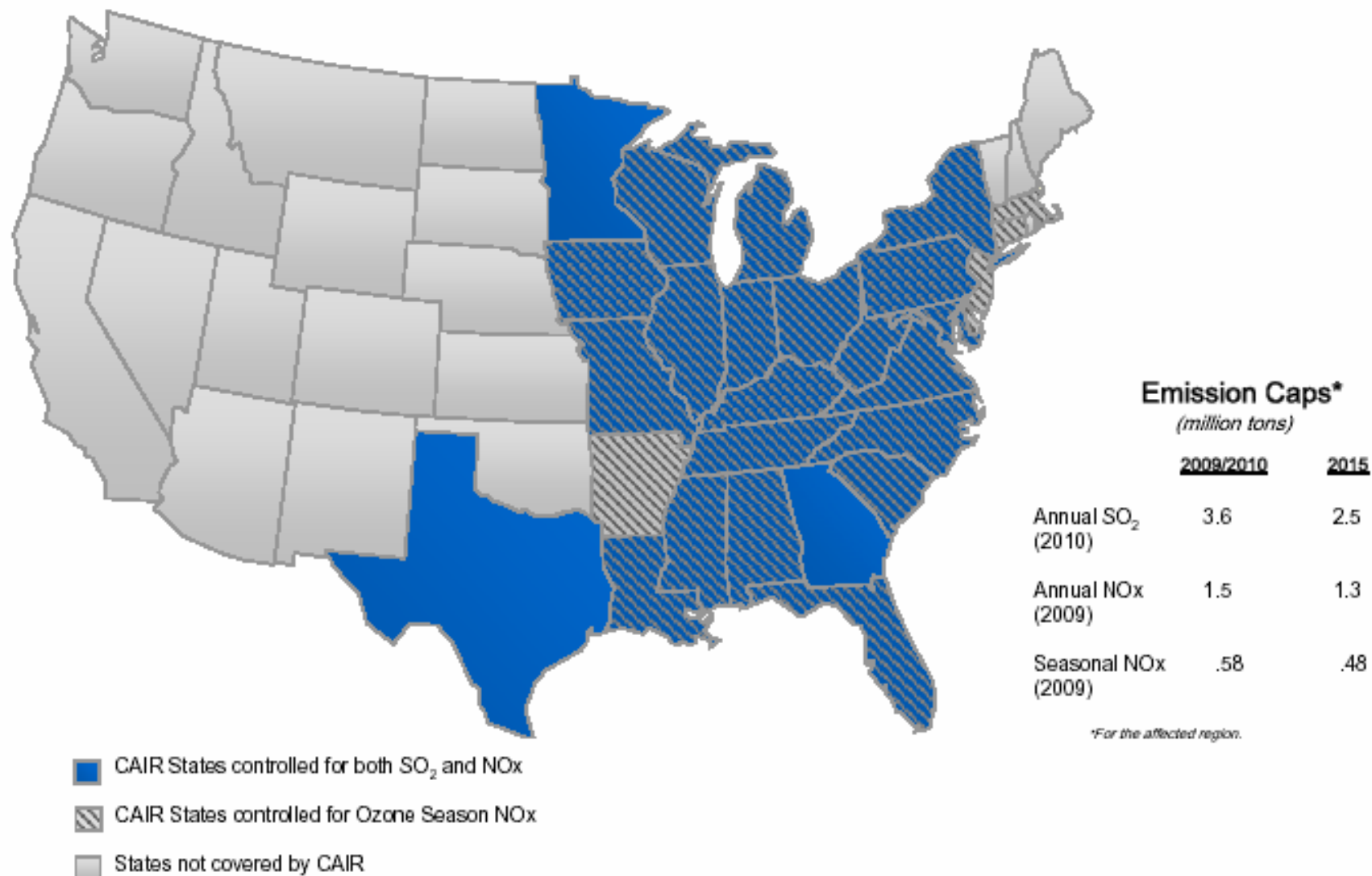
KDHE Concerns for Initial Inclusion in CAIR

- 1996 NEI contained substantial errors for the state of Kansas
- 1996 area NEI overestimated Kansas emissions of NO_x in the industrial natural gas combustion category by ~50,000 tons.
- Also overstatement of NO_x emissions from the natural gas industry by ~50,000 tons.
- Errors had been corrected by KDHE in 1999 NEI

Changes to Final CAIR Modeling

- NEW MODELING DONE
- KDHE provided corrected Kansas inventory to EPA
- CMAQ model used for PM and CAMx for ozone
- "Significant contribution" changed to 0.20 ug/m^3
- 2001 NEI emissions inventory used for modeling
- Kansas' "significant contribution" declined to 0.11 ug/m^3 in new modeling

CAIR: Affected Region and Emission Caps



The CAIR Approach

- Analyze sources of SO_2 ($\text{PM}_{2.5}$) and NO_x ($\text{PM}_{2.5}$ and ozone)
- Model “significant contribution” from individual states on nonattainment areas in 2010
- Propose an optional cap-and-trade program
- EPA develops an emissions budget for each state
- Two-phase program - Declining caps
 NO_x in 2009 and 2015 \rightarrow SO_2 in 2010 and 2015

How EPA Evaluated Significant Air Quality Contributions

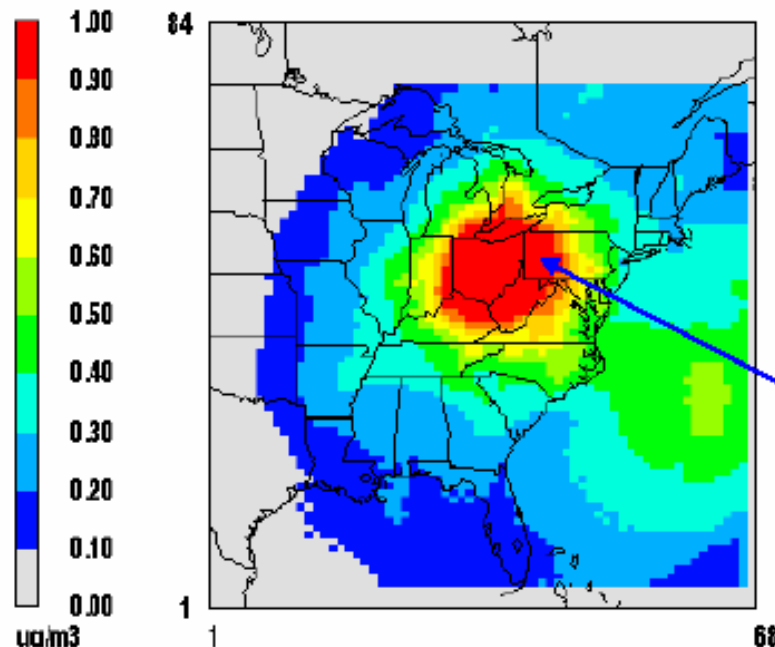
Simulated elimination of all anthropogenic SO₂ and NO_x emissions from Ohio illustrates influence of interstate transport (proposal model example)

Steps in determining significant transport

- Forecast areas that would remain nonattainment in 2010 without additional controls
- Zero out upwind states emissions
- Determine contribution to downwind non-attainment
- If >0.2 ug/m³, significant

OH: Impact on PM_{2.5} in 2010

'roxy2001e1p1_v703_tr10e1p1v703_zoh.ioapi, i=RRF_Proxy2001e1p1_v703_tr10b'



Ohio's maximum impact on 2010 non-attainment is 1.67 ug/m³ in Pittsburgh

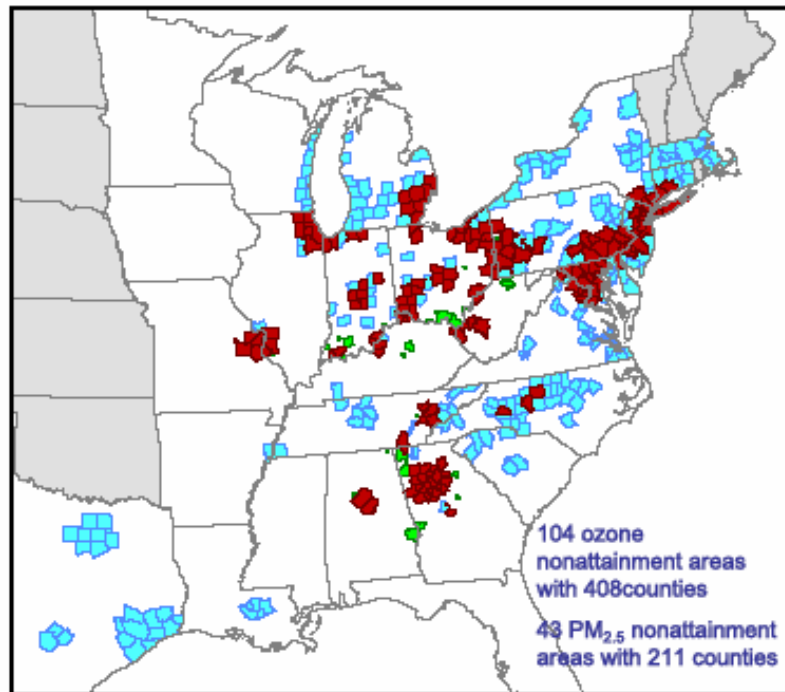
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Min= 0.00 at (1,1) Max=

CAIR Timeline

- Promulgate CAIR Rule 2005
- State Implementation Plans Due 2006
- Phase I Cap in Place for NO_x 2009
- Phase I Cap in Place for SO₂ 2010
- Phase II Cap in Place for NO_x & SO₂ 2015

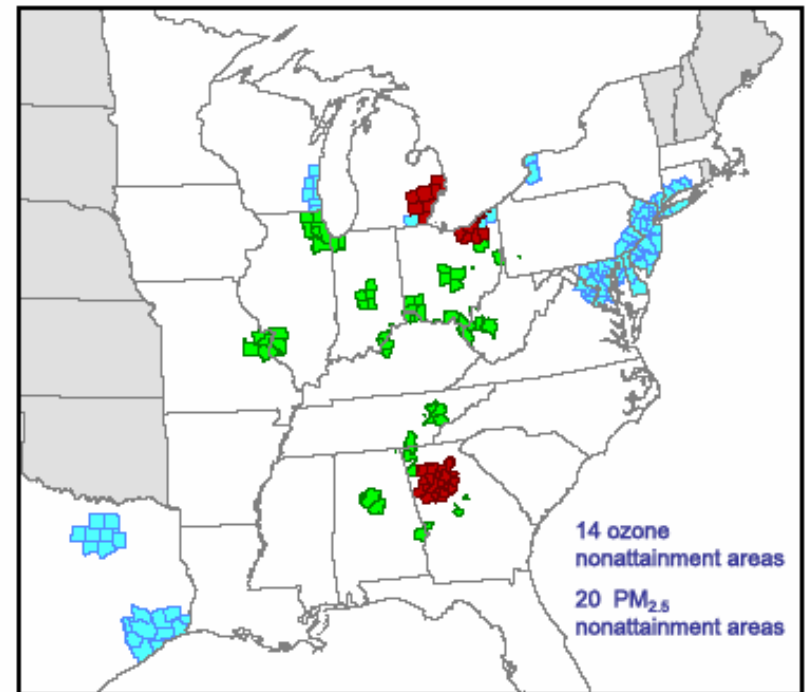
Ozone and Particle Pollution: CAIR, together with other Clean Air Programs, Will Bring Cleaner Air to Areas in the East - 2010

Ozone and Fine Particle Nonattainment Areas (March 2005)



- Nonattainment areas for 8-hour ozone pollution only
- Nonattainment areas for fine particle pollution only
- Nonattainment areas for both 8-hour ozone and fine particle pollution

Projected Nonattainment Areas in 2010 after Reductions from CAIR and Existing Clean Air Act Programs

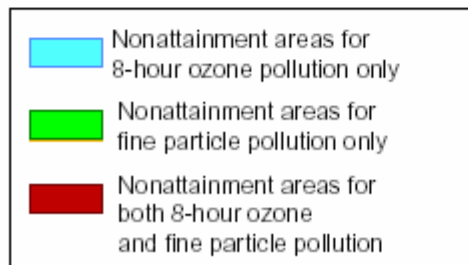
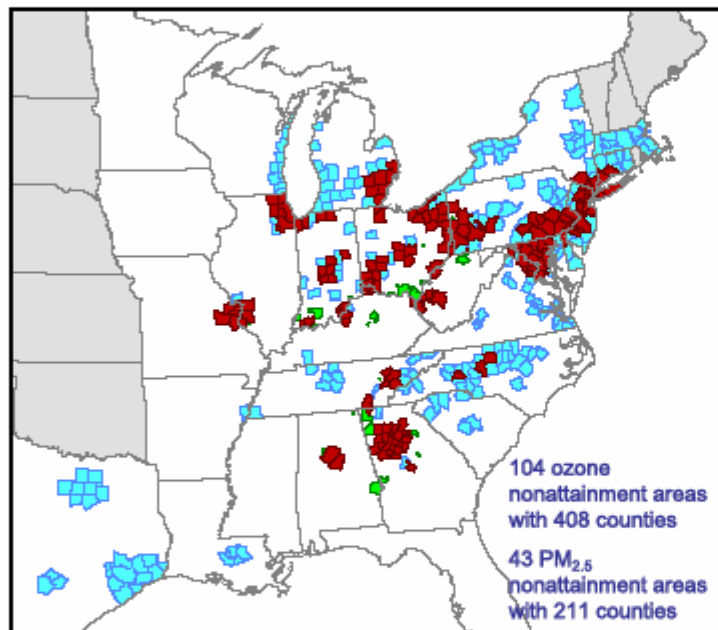


- Nonattainment areas in 2010 w/ CAIR and other programs for 8-hour ozone
- Nonattainment areas in 2010 w/ CAIR and other programs for fine particles

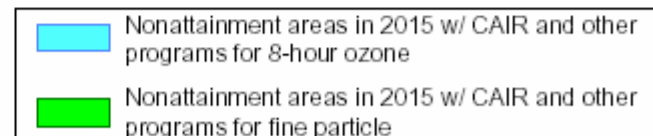
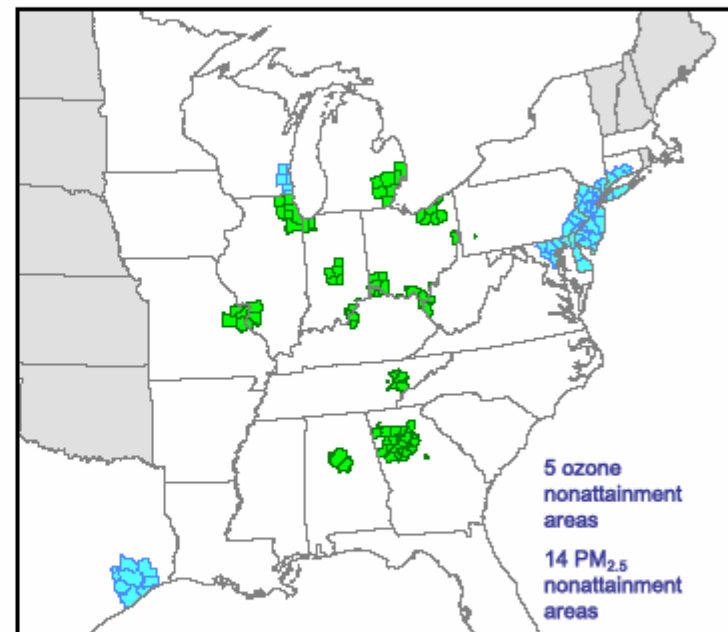
Projections concerning future levels of air pollution in specific geographic locations were estimated using the best scientific models available. They are estimations, however, and should be characterized as such in any description. Actual results may vary significantly if any of the factors that influence air quality differ from the assumed values used in the projections shown here.

Ozone and Particle Pollution: CAIR, together with other Clean Air Programs, Will Bring Cleaner Air to Areas in the East - 2015

Ozone and Fine Particle Nonattainment Areas (March 2005)



Projected Nonattainment Areas in 2015 after Reductions from CAIR and Existing Clean Air Act Programs



Projections concerning future levels of air pollution in specific geographic locations were estimated using the best scientific models available. They are estimations, however, and should be characterized as such in any description. Actual results may vary significantly if any of the factors that influence air quality differ from the assumed values used in the projections shown here.

What about the other states?

- Rule does not allow non-CAIR states to opt in
- WRAP states discussing CAIR-like alternatives
- QUESTIONS????

Where are we at in KC ?

- Cool summer in 2004
- Design value of 82 ppb for Liberty monitor
- Governor's Letter recommending attainment designation sent to EPA
- EPA proposed designation to attainment
- MARC AQF work group has completed Clean Air Action Plan
- Photochemical modeling working

CENRAP / Regional Haze News

- All emissions studies (ammonia, fire, mobile, recreational vehicles) completed
- Growing electric generating unit (EGU) emissions underway
- CENRAP cooperating with MRPO and VISTAS to run IPM with new inputs for EGUs
- Model comparison work underway
- SIP template completed

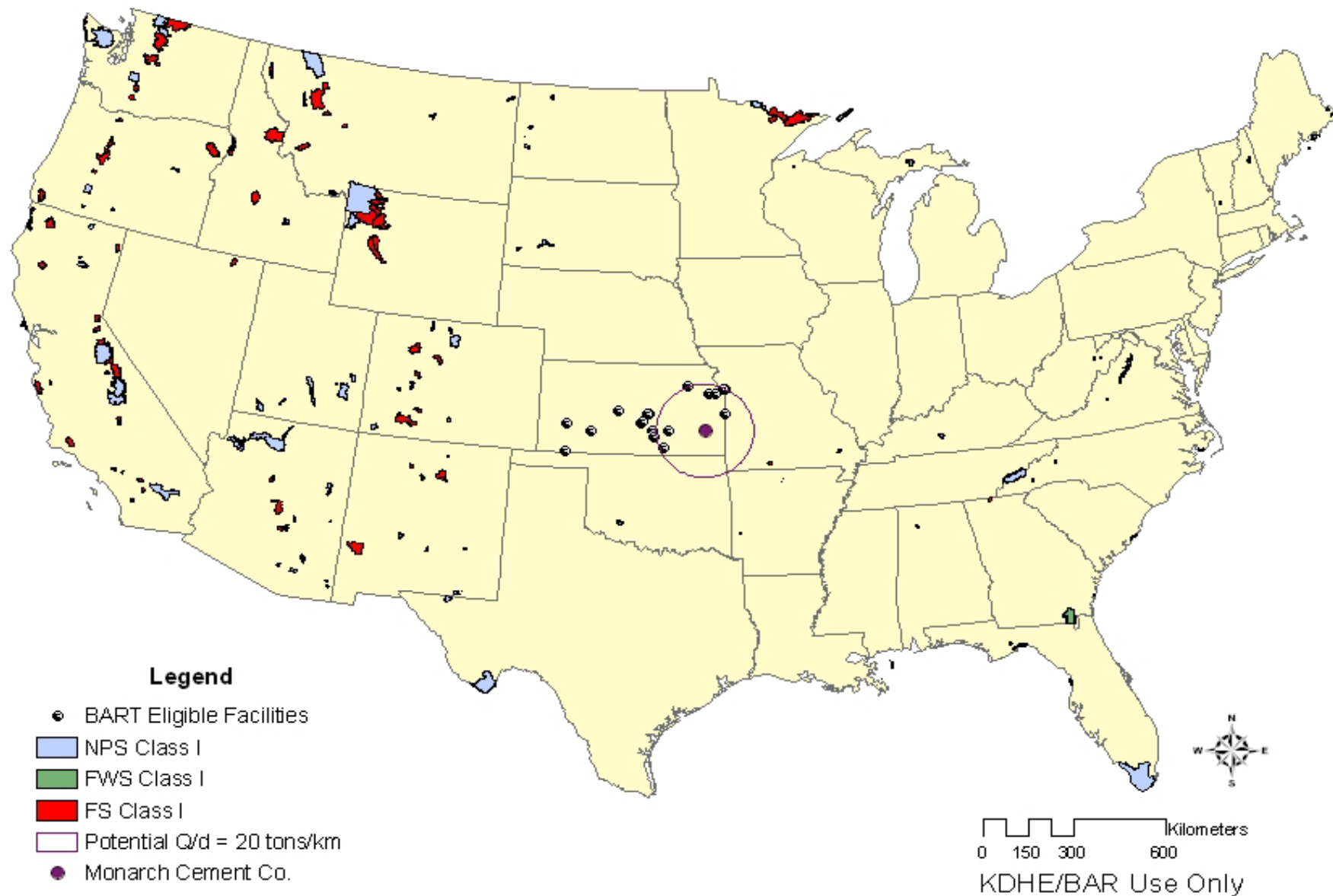
CENRAP / BART

- Kansas BART list complete (18 facilities)
- Emissions/distance calculations complete
- Emissions/distance mapping complete
- Cal-Puff modeling conducted for one facility At ½ deciview impact
- CENRAP to evaluate collective BART emission reduction potential

CENRAP / BART future

- BART rule due out in April
- Prepare Modeling guidance
- Complete collection of meteorological inputs
- Cal-Puff modeling
- Engineering and economic analysis
- Permit modification to incorporate controls

Q/d sample map



QUESTIONS??